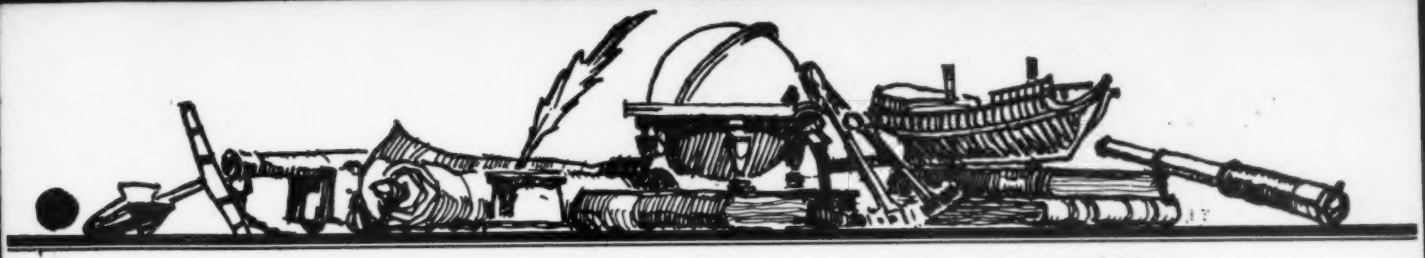

NAUTICAL RESEARCH JOURNAL

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HARRY D. HAMILTON, SEC'TY-TREAS., 15004 E. GRANADA AVE., WHITTIER, CALIFORNIA

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The Light on Makapuu

THE LIGHT ON MAKAPUU

It's now just twenty years or more (O I remember well);
'Tis known through all Hawaii, this story I will tell.
'Tis of a Yankee clipper ship and all her gallant crew,
How they barely missed destruction on the rocks of Makapuu.

The ship had been some days from port when an angry gale arose,
The wind blew strong from Nor' -nor' -east and held her in its throes,
She packt on all her canvas as only Yankees do,
Then she steered a course as true as steel for the cliffs of Makapuu.

The night was dark, the gale was strong, not a star was in the sky.
The lightning flashed, the thunder roared and the seas rolled mountain high.
The skipper cried "All hands lay aft!" for very well he knew,
He had only a few short miles to go to the cliffs of Makapuu.

Said the Captain, "Men, I warn you all, whatever you may do,
Do not take off your harness for there's work ahead for you."
"See all your halyards, braces clear, buntlines and clewlines too,
For we'll shortly want to use them to weather Makapuu."

The storm increased, the ship sped on, right straight before the gale,
But the gallant Yankee captain he carried every sail.
She seemed a moving picture in a sea of spume and blue,
And she was fast approaching the cliffs of Makapuu.

The good mate "Trim" he trod the deck and gazed with anxious eye,
At the strain upon the rigging and the flashes in the sky.
And as he gazed he angry grew until his breath came blue.
"Damn them", he cried, "Why don't they put a light on Makapuu?"

The lookout on the Foc'sle fixed a hard and steady gaze,
Beneath his wet sou'wester into the thickening haze.
Suddenly - he thought he saw - then plainly came in view,
The pounding surf and barren rocks and the cliffs of Makapuu.

"Land's in sight and close aboard" he lustily sang out,
And the seamen 'neath the foc'sle started forward with a shout.
They were Yankee sailors and their business well they knew,
And just what was required of them to weather Makapuu.

The good old mate stood at his post and very cool was he,
His order to the helsman was to "Put her hard alee."
"Raise tacks and sheets!" he loudly cried, jibsheets they fairly flew.
"Main topsail haul, my hearties, we must weather Makapuu."

Quickly the good ship came about, her yards spun merrily,
And soon the Yankee clipper ship was headed out to sea.
The good old mate was happy for very well he knew,
That it was no laughing matter to weather Makapuu.

"Raise foretack and bowline! Now let go and haul,
Then swing around the headyards, now that will be about all,
Upon the weather braces we'll take a pull or two,
And we'll bid goodbye forever to the rocks of Makapuu."

(Some years later)

Hats off to Major Winslow, and young McInstrey too,
Also their Inspectors, and their gallant men in blue.
And don't forget young Houston for he had much to do,
In giving us that sailor's guide - a light on Makapuu.

Listen, Island sailors, a warning I'll give you,
If ever, be it day or night, this channel you sail through;
If you'll only heed my warning your troubles will be few.
Just take a four-point bearing on the light on Makapuu.

When life's voyage is over and our ship is heaving to,
Just waiting for the Pilot to guide us through the blue,
Then may our guardian angel show us a light as true,
As the one that stands erected on the cliffs of Makapuu.

The above verses were written by Capt. John R. Macaulay, a Scottish mariner, who was skipper of many small steamers in the Island trade before he became a pilot for Honolulu Harbor. This poem was often recited at social gatherings by J. Alex Lyle, a kamaaina* shipbuilder and a close friend of Capt. Macaulay.

Makapuu Point, the easternmost point of the Island of Oahu in the Hawaiian group, is on the seaward side of Makapuu Head, a bold, barren, rocky headland 647 feet high. A light, 420 feet above the water, and visible 28 miles, is shown from a low concrete tower. The lens, one of six in existence, is 8-3/4 feet in diameter and 12 feet high and its cost, in 1908, was approximately $12,000. (*a longtime resident of Hawaii.)

Capt. William R. Foster, who hailed from Liverpool, was Harbor Master for several years and he and Capt. Macaulay were very close friends. One day I called at their office in Aloha Tower and found them discussing a big Russian steamer which had just tied up in the upper end of the harbor. Her stern was plastered with strange characters and Capt. Foster asked, "Can you read that, Jock?" Capt. Macaulay took another look and replied, "No, but if I had me flute I could play it." H. G. Purcell.

We thank Mr. Herbert G. Purcell for the poem "Makapuu Lights". We are grateful to Mr. Purcell's daughter for the large, beautiful picture of Makapuu Light. She was not only born at sea but lives within a few miles of Makapuu Point. We thank Mr. W. H. D. King for the small picture of the Light on the first page.

From Mehrel Shank. I have a query on seamanship - what is the procedure of boxhauling? I know that it is the method of veering a ship when the sea is so bad that she cannot tack and she is near the lee shore, but what sails are moved where and in what order? This query originates from the statement "There is a saying amongst seamen, if a ship will not stay you must veer her; and if she will not veer, you must box-haul her; and if you cannot box-haul her you must club-haul her, that is, let go the anchor to get her about on the other tacks".

Answer to Query No. 215 of Douglas J. Miller. One of the best sources of merchant ship plans of that period is "Architectura Navalis Mercatoria" by Chapman. The original edition published in 1768 is quite expensive, but it was reprinted in Germany in 1937. Owen Davies has a copy of this edition for about $45. In the commercial field, Percival Marshall & Co. has Milward's plans for a Dutch East Indiaman, 1730.

THE SPEED OF SAILING SHIPS ON LONG VOYAGES

being a digest and translation of a paper by Capt. M. Prager of the former Deutsche Seewarte in Annalen der Hydrographie for Jan. 1905, with some additional comments by John Lyman.

Captain Prager analysed the logs of 60 typical German vessels of various sizes, over the period 1875-1904. He tabulated speed against wind force (Beaufort scale) and against direction of relative wind, considering various types of vessel separately He grouped relative wind into four categories, "before the wind," with wind 15 or 16 points from the bow, "running free," with wind 9 to 15 points from the bow, "wind abeam," with wind 6 to 9 points from the bow, and "close hauled," with wind 6 points or less from the bow.

The results were generally similar for all types of vessel. All sailed fastest running free and slowest close hauled. All showed increasing speed as wind force increased up to somewhere between 6 and 9 on the Beaufort scale ("strong breeze" to "strong gale"); then the speed decreased as the wind force increased. The larger the vessel, the higher was the speed at a given wind force at most points of sailing (except in very light winds), and also the higher the wind force at which maximum speed was attained.

The wind force at which greatest speed was attained was lower when close hauled than with the wind aft.

A full recapitulation of Capt. Prager's findings would take up several issues of the JOURNAL, but the following tables will give a good idea of the results:

SPEEDS ATTAINED AT VARIOUS WIND FORCES, KNOTS

Vessel type:	Wooden full-riggers				Iron Full-riggers			
Median net tonnage:	1315				1193			
Median length:	205 ft.				220 ft.			
Relative Wind: Wind Force	Aft	Running	Abeam	Close-hauled	Aft	Running	Abeam	Close-hauled
1	1.8	1.9	1.8	1.5	1.9	2.1	1.8	1.6
2	2.9	3.0	2.9	2.4	3.2	3.3	3.2	2.7
3	4.4	4.8	4.8	3.9	4.7	5.0	4.9	4.3
4	5.6	6.2	6.4	5.3	6.4	6.7	6.4	5.5
5	6.9	7.5	7.7	6.1	7.6	8.2	7.7	6.5
6	8.2	8.8	8.5	6.6	8.8	9.4	8.8	7.0
7	8.8	9.1	8.7	6.7	9.2	10.1	9.0	6.7
8	9.3	9.5	8.5	5.0	9.4	9.6	8.8	6.1
9	9.4	9.5	7.3	--	9.2	9.3	8.2	4.8
10	9.1	8.8	--	--	9.0	8.6	6.7	--

Vessel:	Iron & steel 4m. barks				5M. bark POTOSI				5m. ship PREUSSEN			
Net Tonnage:	2597 (median)				3853				4765			
Length, ft.	310 (median)				366				408			
Rel. Wind Wind Force	Aft	Runng.	Abeam	Cl. H.	Aft.	Runng.	Abeam	Cl.H.	Aft	Rnng.	Abeam	Cl. H.
1	2.1	2.2	2.1	1.9	2.3	2.3	2.4	2.0	2.8	2.9	2.5	2.2
2	3.1	3.5	3.4	3.0	3.5	3.9	3.7	3.5	4.4	4.6	3.8	3.7
3	5.3	5.7	5.3	4.7	5.5	6.4	6.3	5.1	6.6	6.7	6.6	5.6
4	6.5	7.0	6.8	6.0	7.4	8.9	8.2	6.9	8.9	9.2	8.4	7.6
5	7.9	8.8	8.2	7.1	9.1	10.5	9.9	7.5	10.5	11.2	10.2	8.6
6	9.2	10.0	9.6	7.6	10.8	11.3	11.0	8.0	11.8	12.5	11.2	9.2
7	10.0	10.7	9.9	7.0	12.0	12.7	11.5	8.6	12.5	13.4	11.4	9.1
8	10.7	11.0	9.6	6.3	12.5	13.0	11.7	7.5	13.0	13.7	11.4	8.2
9	10.9	10.8	8.6	5.6	12.8	13.1	10.1	7.5	12.3	13.4	10.5	6.9
10	10.4	9.5	7.5	4.7	12.2	12.2	10.2	6.1	12.2	13.3	8.8	5.9
11	9.3	8.3	--	--	12.0	11.8	6.9	--	11.5	12.6	7.4	4.7

I have added the vessels' lengths from "Lloyd's Register", as they are not given in the original paper. They help to show why the wooden full-riggers, though averaging somewhat higher in tonnage than the iron full-riggers, were slightly slower. Other things being equal, the speed of a vessel varies with the square-root of the waterline length, and the following analysis shows how well the above figures obey this law:

Registered length, feet	205	220	310	366	408
Square root of length	14.6	14.8	17.6	19.2	20.2
Speed, running free, wind force 7	9.1	10.1	10.7	12.7	13.4
Ratio, sq. rt. length/speed	1.60	1.47	1.65	1.51	1.51

Considering the nature of the data, the ratios on the fourth line are fairly close, and if one were tempted to trust them as accurate to better than 5%, they might be used to give an idea of the ease with which the various types were propelled, that is, their sharpness or approach to clipper form. On this basis, the smaller the ratio the faster the vessel, and it might be supposed that the iron full-riggers were sharper than either the wooden full-riggers or the iron and steel four-masted barks. There is a good deal of evidence that tends to bear this out, though a great amount of study would be necessary before this could be considered conclusively proven.

We are concerned here with speed on short spurts, but a similar relationship holds good when the time on long voyages is considered. For example, here are some average times for vessels of various tonnages for the passage New York-San Francisco, as given in "American Neptune" for 1948, page 151:

Tonnage, old measurement	800-999	1000-1199	1200-1399	1400-1599
Days, N.Y. to S.F.	136	128	129	121
Registered length, mean	172 ft.	184 ft.	194 ft.	207 ft.
Square root of length	13.3	13.7	13.9	14.8
Product, days x sq.rt. length	1810	1755	1790	1790

The products on the fifth line again are very nearly constant, and they could be converted to the ratios in the fourth column of the previous table by multiplying by 24 hours in a day and dividing by the distance in miles from New York to San Francisco.

If this is done, the values obtained are around 3.1, which merely indicates that the average wind on the passage gave a speed about half that which a favorable wind of Force 7 would have produced. Again, this proves that a fast passage was largely a matter of getting enough wind and keeping it. Take, for example, the 89 day 8 hr. record of the FLYING CLOUD between New York and San Francisco. She logged a shade over 15,000 miles on the run, for a daily average of 168½ miles, or almost exactly 7 knots. The FLYING CLOUD's length was 229 feet, and the square root of this number, 15.1, divided by 7, gives a ratio of 2.16, whereas Capt. Prager's group of wooden vessels have a ratio of 1.60 at wind force 7.

The size of a vessel also influences her ability to make use of the winds that she may encounter. From New York to Liverpool, for example, is about 3300 miles, and a 10-knot vessel can cover this distance in 14 days. With fair winds, a steel four-masted bark could make 10 knots with winds of Force 6 or 7 all the way; but these same winds would send a wooden full-rigger along at only 9 knots at best, so that she would take 16 days on the same passage. And in these extra two days the chances of losing the fair wind are very much increased: this is the reason why the all-time sailing records always show a lower average speed on the longer runs.

The following table, compiled from Carl Cutler's recent "Five Hundred Sailing Records of American Built Ships," illustrates this last point very well:

Run	Ship	Days	Distance	mi/day	knots
San Francisco-Honolulu	SWORDFISH	8.0	2090	259	10.8
New York-Liverpool	RED JACKET	12	3332	277	11.5
Yokohama-San Francisco	JAMES STAFFORD	21.5	4536	211	8.8
New York-Rio de Janeiro	SNOW SQUALL	28	4770	171	7.1
Hong Kong-San Francisco	CHALLENGE	33	6044	186	7.8
Callao-New York	OCEAN TELEGRAPH	58	11,000	190	7.9
New York-San Francisco	FLYING CLOUD	89.3	15,000	168	7.0

There are some kinks in the curve, depending on whether the passage was mainly in high latitudes where winds are stronger, but in general the inverse relationship between distance and speed holds good.

One more point connected with this topic of sailing vessel speed is apparent from Capt. Prager's figures -- the difference between a head wind and a fair wind. Let us suppose, for example, that we wish to get from Point A to Point B in a 1315-ton wooden full-rigger, and the wind blows exactly in that direction at Force 6. The tables show that we should be able to average 8.2 knots for the distance. But now suppose we are bucking a head wind, in exactly the opposite direction. The best we can do is brace sharp up and slam into it, and the tables show that close-hauled we make only 6.6 knots. But this is not the worst of it. We are making good a course at best 5 points off the wind, and making no allowance for the distance lost while tacking or wearing ship gives us a distance made good along our course of only 3.7 knots, or 45% of the speed in the other direction.

What this lengthy discourse boils down to is that in considering "records" one should be careful to compare vessels with others of their same build and tonnage. A vessel built after 1880 should not be expected to have the same length/speed ratio as a clipper of the 1850's, nor should the performance of 100-ft brigs and schooners be compared directly with the work of 225-ft full-riggers. On a square-root-of waterline basis, a passage of 120 days from New York to San Francisco by a 100-ft schooner (and I think there were some) is the equivalent of 80 days by the FLYING CLOUD. There still remains a good deal of research to be done in the field of record passages when all pertinent factors are considered.

"FAST AND ABLE" - Life Stories of Great Gloucester Fishing Vessels
by Gordon W. Thomas
Gloucester, Massachusetts; The William G. Brown Company, 1952, price $1.50

A Review by John Lyman

Gordon Thomas, the son of a Gloucester sailing skipper, has been collecting data on Gloucester fishing schooners for many years, and for the past two years has contributed a weekly series of stories on them to the Gloucester "Times". He has now collected thirty-eight of these stories in a volume of ninety-two pages, which is being published for the benefit of the Gloucester Fishermen's Institute.

Fishing is a hard way to make a living under the best of conditions, and working from dories in the period covered by the book, ranks among the worst of conditions. The author, however, carefully avoids any attempt to dramatize his vessel histories, relying on plain narration of the facts to bring home its points. Most of the vessels were lost at sea, a fact that draws no special comment, for this was the usual fate of Gloucester vessels.

Model-makers will find this book of great assistance in working with New England fishing schooners, as there is given a portrait of each vessel, usually under full sail, and in most cases the spar dimensions are also presented. A glossary on page 80 explained some of the terms peculiar to the fishing industry.

The Gloucester Fishermen's Institute was incorporated in 1891, and maintains a building in Gloucester for the use of mariners. It sponsors the annual memorial service at Gloucester, where flowers are scattered on the outgoing tide in memory of Gloucestermen lost at sea during the year.

CANVAS DIED HARD IN THE NAVY
by Victor Darnell

Naval history between the Treaty of Ghent and the Civil War records few actions but great changes in materiel. It was in this period that steam was introduced and developed to a fairly efficient state, but the use of sails was not completely eliminated as some people might judge from the Monitor-Merrimac duel. For many years the two means of propulsion were combined in a very useful manner.

The steamship, while it provided an opportunity for naval tactics based on freedom of movement, was not regarded with much favor at first. Its first uses were to tow sailing ships in calms and similar minor tasks. The chief-constructor of the British Navy wrote in the mid-1840's "I consider steamers of every description in the greatest peril when it is necessary to use broadside guns....." The engines were not too efficient, speeds low, and coal stowed at the expense of guns or ammunition. Thus sails were carried and used whenever possible. Canvas died hard; the 1883 cruisers of the new Navy were square-rigged and carried sails on all yards!

After reading of the weaknesses and unenthusiastic reception of the steamers, the reader may be surprised to learn that the first steam warship in the world, the USS DEMALOGOS (or FULTON the FIRST) was designed to proceed under steam alone. She was later provided with two masts and lateen sails, but this was done at the request of her first commander, Captain David Porter. The FULTON was a strange vessel being a twin-hull with one paddlewheel in the space between the hulls. Finished too late to take part in the war she lay at Brooklyn (having been built in New York) until destroyed by fire (perhaps deliberately) in 1829.

The next steamer built specifically for the Navy was also called FULTON, sometimes referred to as FULTON II. This ship was initially bark rigged and had two stacks between the fore and main masts. After her launch at New York in 1837 she was employed for five years and then laid up at Brooklyn. In 1851 she was altered, re-engined, and re-rigged as a two-masted topsail schooner, and then used in the Gulf of Mexico and the Paraguayan expedition. The FULTON was captured at Pensacola by the Confederates and burned by them in 1862 when they abandoned the Navy Yard. A sketch in Bennett's Steam Navy shows a box-like vessel with high bulwarks and no sheer. There was a curious cutout section from the stem halfway to the foremast, and the bowsprit passed over this being apparently fastened to the top of a deckhouse just forward of the mast. I have no mention of her sailing speed but doubt that it was more than moderate. She was basically a coast defense ship and had little need for sails as no extended voyages were considered when designed.

After these two floating battery or coast defense ships the Navy ordered a pair of handsome steam frigates. The MISSISSIPPI and MISSOURI were built at Philadelphia and New York respectively to the same hull plans but were fitted with different engines. When completed in 1842 they had a bark rig with 19,000 square feet of sail to the top-gallants. The paddle boxes and single funnel took up most of the space between fore and main masts, the latter being stepped quite far aft. This use of deck space resulted in far fewer guns being carried, but these were of much larger size. The MISSOURI burned at Gibralter in 1843, and her sister took part in the Mexican War, expedition to Japan, two voyages around the world and finally the Civil War. In 1863 she was sent to the bottom of her namesake at the battle of Port Hudson.

The next, and last, pair of American sidewheel frigates, were the SUSQUEHANNA and POWHATAN of 1850. These were similar ships but not sisters. The former, launched at Norfolk in 1850, was designed by Grice. The latter, launched at Philadelphia the same year, was designed by Lenthall. In general appearance (rig, and location of funnel) this pair resembled the MISSOURI; they had a better looking stern and were more graceful. The SUSQUEHANNA was sold out in 1863, but the POWHATAN, one of the most popular naval vessels of that time, lasted until 1887. These were good seaboats

as the POWHATAN proved by battling a hurricane off Cape Hatteras in the twenty-eighth year of her career. These paddlewheelers were not hybrids designed for both sail and steam and suitable for neither. They proceeded many miles under each.

The forementioned vessels were not the only steamers of the early Navy. Several auxiliaries were purchased from time to time, and three experimental vessels were built to try the unsuccessful Hunter Wheel. The MICHIGAN built in 1843 for the Great Lakes was the first American naval vessel to have an iron hull. In 1842 the screw-propelled PRINCETON was launched. This was the first such vessel in any navy and proved so successful that the steam frigates of 1854 were similarly driven and no large paddle-wheelers were built after the POWHATAN.

It is hard to say when sail ended in the Navy. It lasted longer than the paddlewheels which augmented it, and for fifty years after the screw was introduced sails were carried. As engines increased in size and efficiency sail diminished in importance, but for many years it was as important as the machinery hidden below decks.

Vessel	Propulsion	Displacement	Tonnage	Length	Beam	Launched
FULTON	centerwheel	-	2475	156	56	1814
FULTON	sidewheels	1200	750	180(BP)	34'8"	1837
MISSOURI	sidewheels	3220	1700	229(OA)	40	1841
CONGRESS	sail	-	1867	179(BP)	47'8"	1841
PRINCETON	propellor	924	672	164	30'6"	1842
SUSQUEHANNA	sidewheels	3824	2450	250	45	1850

THE DEVELOPMENT OF MAP MAKING
An Exhibition in Baltimore

From a letter by Dr. Horace K. Richardson

I wish all the members of the Guild could be in Baltimore at this time. The City Museum, together with the Peabody and Walters Art Gallery have put on one of the most unusual exhibitions ever to be seen in the entire country. From most of the important libraries of the world they have gathered together 282 original maps and charts, showing the development of map-making and the growing knowledge of the world. They come from private and public collections as well as Harvard, Yale, Library of Congress, many universities, Pierpont Morgan Library, Bibliotheque National, Paris, Royal Library, Copenhagen, Denmark, American Geographical Society, Columbia, Johns Hopkins, etc. etc.

It shows the history of map making from the year 3000 B.C. down to the 20th Century and is not only an amazing example of the cartographer's work but it is also an exhibition of fine art. Some of the old charts are very beautiful with their colors as vivid, clear and bright as though made yesterday. The earliest map is that of a surveyor's delineation of a field in Babylonia, 3000 B.C. It is 2¼x2" on a clay tablet. From this one goes on to paper, cloth, wood and the most beautifully illuminated vellum. There is one from Egypt on papyrus, dated 332-30 B.C. Among the specimens we see the original works of Ptolemy, Isadore Seville, 600 A.D., the World of Macrobius, 400 A.D., the World of Beatus, 776 A.D., the medieval Persian World, 16th century. One of the most beautiful and accurate maps is that of Solarus of Majorca, ca. 1380, of the Mediterranean and Atlantic Coast, the maps of Vespucci, ca 1580, of the Mediterranean and Atlantic Coast. There is the earliest picture of the New World in Columbus' De Insulia. Mercator's map is wonderful and beautifully done. There are maps by Champlain, who was a novice in map making in comparison with John Smith and his map of New England. There was also Smith's map of Virginia.

It would take a book to describe the wonders of this collection. It is an outstanding exhibition in the annals of the fine arts and development of geography. I wish all members of the Guild could have the opportunity to visit and study this exceptional collection. Probably never again will so many original and historical maps be gathered together in one place.

NAUTICAL RESEARCH GUILD ★
Dedicated to the Era of Sail

SECRETARY'S MONTHLY LETTER

THE SECRETARY'S MONTHLY LETTER WAS ESTABLISHED IN 1948

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Letters to the Secretary:

FROM SHIPLOVER'S SOCIETY OF TASMANIA
9 Waterloo Crescent, Hobart, Tasmania

Dear Mr. Hamilton:

I have much pleasure in informing you that you have been made Honorary Member of this Society. The Society is making good progress and we now have about 235 members. We welcome an average of six new members each meeting and the average attendance over the past year has been 86 at all general meetings of the Society.

Our book "Blue Gum Clippers and Whaleships of Tasmania" is continuing to sell. I think that when another 200 copies have been sold production costs will have been met. Captain Harry O'May has written the story of the wrecks in Tasmania and we are hoping that it will be possible sometime to print this book as well.

With kind regards from all, yours sincerely,

(signed) D. M. Davidson, Hon. Secretary

Note: This honor was accepted with deep appreciation in the name of the Guild.

From Edw. N. Rich with a query: (Box 71K, Wellfleet, Mass.)

Query No. 222 - Old Cannon and the BENGAL. I have located a cannon with the name Bengal engraved on it and with it the Massachusetts Coat of Arms with the Indian- possibly it might be only the name engraved on the gun but also there is the possibility that it might be the name of the ship which carried the gun, a privateer, or merchantman, of about 1745-1812. Will appreciate information on any vessel carrying that name.

This query lines up with Don Clark's cannon which was found on the ELLEN FOSTER at Neah Bay, Wash., which bore the Massachusetts Indian Seal. This cannon was one of two located at Morristown, N.J., the other without the name "Bengal" on it. The two at Bunker Hill have the Indian seal and I am told there are two more at the Old State House, Boston, plus one at the Citadel at Quebec "captured at Bunker Hill". They are evidentally all of the same era. We hope to visit Taunton, Mass. this week to try to get more dope on the old gun foundry and next month when in Boston will check on those at the Old State House, the Historical Society and Geneological Society, the Bostonian Society, also the Library. Have written the Citadel at Quebec for what information they can give me. The Bunker Hill Guns were formerly, before 1776, the property of the Ancient and Honorable Artillery Company of Boston and were sneaked out of town by the Patriots. The Seal was allowed the Ancient and Honorable Artillery Company. The Bunker Hill guns were first used in 1768 to "fire a salute on the King's Birthday" and were cast between 1756 and 1768 from old discarded armor - some reports say in England but others in Massachusetts-I am inclined to believe the latter".

On our trip, we went over the Mohawk Trail to North Adams via Worcester where we looked over the Worcester Process Steel Co.'s exhibit of old cannon, collected by the owner which was larger than that of most big museums. Then on to Fort Johnson and studied the 32 cannon which were there in 1760 - then through Glens Falls to Lake George and to Fort Ticonderoga. We went up to Crown Point and Essex where the Continental Gondola PHILADELPHIA is now. We stopped at Vergennes to see one of Arnold's cannon at Basin Harbor, and by easy stages we made Ayer, Mass. where we had a fine Gam with Harry Erskine.

RIGGING TOOLS

by

Thomas Hornsby

Despite the fact that many articles have been written on model making, few have contained much advice on tools suitable for rigging. Those described here, have been found useful over a period of years of active model making, and are largely my own ideas of what is needed for the purpose.

Probably the most useful tool is the dental explorer. This is excellent for hanging blocks, for catching lines, and is indispensable for making the finishing loop over the belaying pin. It has a wide variety of uses, many of which will occur to the modelmaker as he employs it. Figure A.

Tool B is fashioned from a discarded dental instrument, and is formed into a long slim point, sharp as a needle. It is used as a persuader, for opening the holes in blocks and deadeyes, and for retrieving and placing wooden deck fittings in hard to reach places. It opens the most stubborn knots, rounds out eyebolts, slips through them and holds them while they are being driven. It wedges lines temporarily, or impales them to the deck while hands are busy elsewhere. Clamped in the vise, blocks may be slipped on the point and seized in, but in this use, be very careful of sudden movements in its proximity, for the point is cruel and wicked, and it makes an ugly and painful wound.

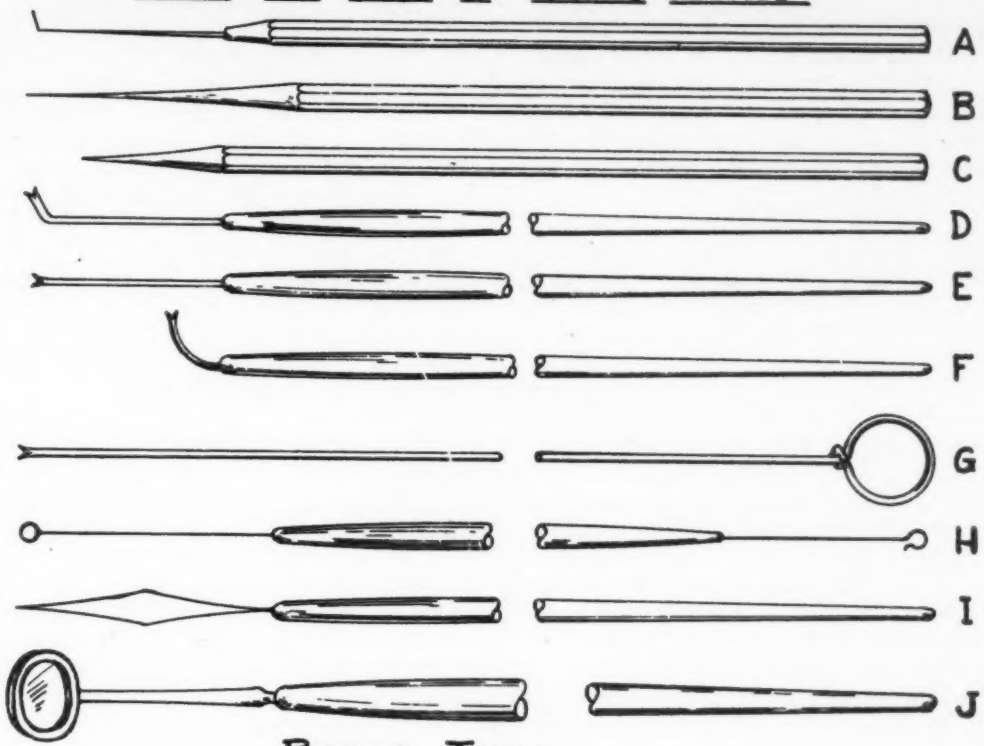
The tool shown at C is fashioned after the above, but is a shorter and more sturdy version. It is used in some of the same methods, but serves also as a scratch awl, pick, and light center punch for locating starting holes, in and about the masts and yards.

The regular belaying tools, which have been in use for a long time, may be fashioned in a number of forms. These are made by flattening the end of a piece of brass or copper wire, and sawing or filing a notch in the end, like a two pronged fork. The notch should not be too deep, for there will be occasions when the shanks of the belaying pins are very close to the inside of the bulwark of a small model, and the tool will not be able to place the line around it. When this occurs, it is advisable to make a smaller model, capable of doing the work, by breaking through the eye in a needle, and mounting the point in a suitable handle. When making these tools, it is important to file or stone the prongs, to remove as much of the burr as possible, otherwise they will likely roughen and fray the line they handle. Figure D shows one type of belaying tool, with a shoe or offset, in order that it may not interfere with the line of sight. Figure E shows the needle type mentioned above for smaller models using lighter lines and belaying pins. Tool F, is another type for working from the side, where it is impractical to belay across the model. Figure G illustrates a type made entirely from wire, with a finger loop at the end; where it is necessary to belay over the top of a deck house or other structure this may be readily bent with the fingers to the needed shape, and after use can be returned to its original straight line. This tool by the way, is useful in pushing the bight of a running line down through the lubber hole towards the deck.

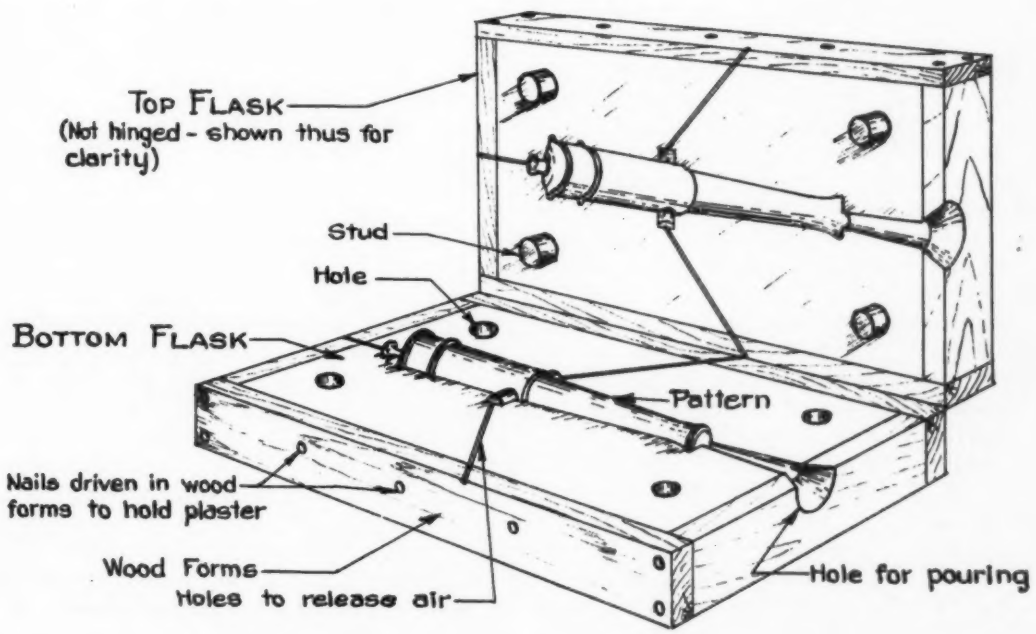
A hook and eye tool, is made from spring brass, and is used for pull-lines through rigging. One end is closed by soldering, to form a "safe" eye, and must be threaded to use; the other is fashioned in the form of a bill hook, capable of catching a line and quickly releasing it in turn. The closed eye tool will draw a line down through tightly packed rigging. This double ended tool is shown at H, as I made it, but it can be made as separate tools.

The snare, shown in Figure I, is made from a piece of fine steel wire, being .008 in diameter. It is copied somewhat after a needle threader, and I use it in very tight places, and in threading lines through stubborn holes. A small hole is drilled in a handle, and the ends of the wires are pushed out through the opposite

FROM THE SHOP OF THOMAS HORNSBY



RIGGING TOOLS



CASTING CANNON

Drawn by N.R.G. Dflsmh. H.F.Scott 3-1982

sides, about 1/2 inch above, the wires are bent into hooks and pressed back into the wood in order to leave no snagging ends, and to prevent the wire being pulled from the handle in use. The noose thus formed should be about 2 inches in diameter. Find the center of this loop, and crimp it at the end, to as fine a doubled point as you can, if necessary tap lightly with a hammer. Next halve the two sides of the wire and kink it slightly, so that the loop will readily open up after it has passed through a small hole. This snare passes cleanly through a #78 drilled hole.

The dental mirror, Figure J, is not properly a rigging tool, but it will sometimes prove of value in examining inaccessible places. I use it to determine whether the line is correctly placed around the belaying pins, under the rails, where I cannot see it in any other manner.

Tools D to J, (with exception of G) require long slim handles that will pass easily and safely through the most complicated rigging. For this purpose I choose the 10 to 12 inch handles of discarded oil painting brushes. Break off the metal ferrule, and spin the handle in a polishhead or in a lathe, filing or sanding off the old finish. With a file reform the tool end of the handle into a gentle curve, about like the tip of a knitting needle; this is very necessary in order to prevent snagging other rigging when in use. Sand by hand lengthwise to a smooth finish. Dip in clear lacquer, and allow to drain dry by hanging them vertically. Mount the tools in the handles by carefully sizing the different wires to the drilled holes, and force the handles onto the wires. These tools are well balanced, light, and yet unbelievably strong for their size and simple construction. For those who wish to make the snare, and do not have access to the fine wire needed, I will send an ample supply upon receipt of a stamped self-addressed envelope.

DIE CAST GUNS FOR SHIP MODELS

From the Shop of Thomas Hornsby
In answer to Query No. 190 (May 1952)

Inexpensive die cast guns in a variety of sizes may be purchased from ship model supply firms, turned brass guns are also obtainable, but their cost is about three times as great. In many cases, these guns however, will not fit the scale or the type needed for your model, in which event it is best for you to cast your own battery of guns. To do this, it is essential to have an accurately made pattern of hard wood or metal, and there are several members in the Guild that will arrange to do this for you. The method by which guns and other metal parts are cast has been published many times, the following is a condensed version.

Make two rectangular wooden forms, say 3" by 4", using strips of wood about 1/2" by 3/4", make these without tops or bottoms, and drive a few brads through the sides to help retain the plaster. Place one of these frames on a piece of plywood, mix sufficient plaster of Paris or dental plaster to fill this lower flask. A small quantity of Portland cement added to this mixture will make a stronger mold. When the plaster has reached the putty state grease your gun pattern with vaseline jelly, and press it down into the plaster until one half of it is imbedded. Allow to dry overnight.

Remove pattern carefully, drill four shallow holes in the plaster, one in each corner, in order that the upper flask mold will register. Clean off pattern, brush surface of plaster to remove any "rag", regrease pattern and replace in exactly the same position. Coat the entire top surface of the lower mold with vaseline, place top empty flask over the lower flask, mix new plaster and pour in as before, "knock" this down gently to remove air pockets. Set aside to dry.

Separate top and bottom flasks, and remove pattern. Cut a pouring gate from the gun impression, and from the ends of the trunnions and cascabel, make shallow V cuts to allow the air to escape when the molten metal is poured in. This gate may also be made by imbedding a piece of dowel, in the same manner the impression was made of the

pattern, at the time the plaster was poured. The mold must be bone dry before using, and can be baked in the oven to help dry it thoroughly. It is also helpful to smoke the mold with the flame of a candle before pouring the metal. To make castings, clamp the two flasks together, melt type metal.

Dow metal or white metal in an iron ladle and pour into the mold until the spout is full. The metal must be bright and completely molten, skim off any dross with an old teaspoon. Do not use lead for the casting metal, in time it will turn to lead salts and crumble. The first few pulls are usually pitted and poor, but as the mold gets hot, good usable castings should result. If air pockets persist in the castings, make sure your side vents are open and allowing the air to escape.

QUERIES and ANSWERS

Query No. 216 by Fred S. Rice, 3825 S. 11th St., Tacoma 6, Wash. The GOLDEN HIND- with apologies to Howard Chapelle. I am building a model of Sir Francis Drake's GOLDEN HIND. Would like information or advice on the decorations of her stern and transom, also her ensign and pennants and decorations on her sails, if any. Of course they would all be reconstruction and imaginary or suitable for a ship of her build and period. Drake is one of my heroes and I want a colorful model for my mantle. I have collected all the material I can find on her and have started a model of a late 16th Cent. Elizabethan ship and hoping she will look something like the GOLDEN HIND and I have the hull completed and planked.

Query No. 217 by F. W. Thober -- The SHENANDOAH . For the purpose of building a model, I should like to obtain all possible data on the four masted bark SHENANDOAH, built in Bath, Maine in 1890. This would include plans, descriptions, spar dimensions, photographs, especially deck and detail views.

Query No. 218 by our new member Richard W. Weston, Route 5, Box 155, Porterville, Cal. Could anyone give me information as to ships in the tea trade owned by Richard Warren Weston which ran to China and Ceylon. The only two names of his ships I have are the KANDY and the KATHAY. Also can anyone give me information as to a Weston who built ships in Duxbury, Mass. I believe he was called King Caesar. The Plymouth Cordage Works used to be his old rope walk. I think Weston was the Senior partner of Goodhue & Co. The office of the company was at 20 South St., New York. I would appreciate any record of the family at sea back to 1600 as all were sailors.

Query No. 219 by Dempsey Forsythe, 3530 Juneway, Baltimore 13, Md.. Query on Frames and Cant Frames. On one of the plans I received, the sheer plan shows 34 frames and the body plan has only 22 frames. How can I get the true forms of the other 12 frames? Also, in the bow of model how can I cant the frames and still have the true shape and forms of the bow?

Query No. 220 by a prospective member - Mr. R. C. Shepard, c/o Cornwell, Apartado 570, Lima, Peru. The NELSON -- The square-riggers with which I have come in contact are the German 4-masters PRIWALL, PADUA, the Chilean 3 master NELSON, the Peruvian 4 master OMEGA ex-DRUMCLIFF, Peruvian 3 masters MAIPO and TELLUS. Of the above the only one that I know briefly was the NELSON. Have you any idea that she is still afloat? According to Lloyds she is still listed as a barque. The others I knew well.

Answer to Query #210 of John Lang by Scrim Wagner. To soften ivory soak it in strong vinegar, white vinegar is better than dark--for three hours, which will soften old, dry ivory like old piano keys, old handles etc., an eighth of an inch in from the surface, so that it will cut about like boxwood or holly. The same soaking for walrus ivory. Newer or greener elephant ivory less soaking is required. Bone is handled the same way. Ivory is wicked stuff to cause the knife to slip and cut one badly. Filing and scraping does better work anyhow. Very dry ivory chips badly under the

knife or saw, vinegar treated ivory should be soaked for several days in changes of water after the carving is done, to remove all traces of acid and prevent discoloration. Drill with great caution, binding the work between strips of wood if possible.

Answer to Query #212 of John M. Minuse by Scrim Wagner. "The Steam Box". By far the simplest way to steam small stuff for ship models and similar sized stuff is to use one of the cheaper types of non-basting aluminum kitchen roasting pans with the smooth dome-shaped covers without drip cones. Put about two inches of water in the pan, place the wood on any kind of rack that will hold it an inch or more out of the water and let the water boil; five or ten minutes for little stuff in soft wood to ten or more for hard woods and thicker pieces. For stuff too big for this method get a three inch length of copper or galvanized downspout from a tinner, cut required length. Rig a wooden cradle as for a model. In one end of the pipe fit a wooden or tin end with a pipe connection. Leave the other end open till the wood to be steamed is in place. Then plug loosely with excelsior or tie several thicknesses of woolen cloth over the end, anything just to let the steam escape slowly without blowing the thing off of the pipe. The wood will steam just lying in the pipe but better if supported on a rack. To bend the work without breaking or kinking, get any round smooth object, pipe, fruit jar, tin pail, etc. about the degree of curve you wish to achieve and an old dress stay or other strip of spring metal, hold the wood against the curved surface with the spring backing it. Slide the thumb along the stay, pressing it closely to the mold and tying it till the wood is set, then remove and place on the model. Do not force pins into fresh steamed wood, wait till it is hard again and drill.

Query No. 221 from Frank J. Watson, Jr. 2-4 Bloomfield Ave., Drexel Hill, Pa. The bark FORTUNA — I would like information about the early history and/or former name or names of the steel bark FORTUNA, of Trapani, Sicily which was wrecked on the New Jersey Coast at Ship Bottom during the winter of 1909-10. I have several snapshots of the wreck which I will send for free to anyone interested.

Another answer to Query #212 - "The Steambox". (Take your pick). by Fred S. Rice. I find Alaska cedar very good for most model work and find it bends readily cold, but for garboard strakes, bending at bow and stern, I simply lay the strakes in the sink and pour boiling water on them. However for long stuff, I have made a steam box, using an old fashioned teakettle with a curved snout, dressing out four laths and nailing them together edgewise, using white lead where they join, then take this square tube and stick it over the snout of the teakettle and caulk it good with rags; place the teakettle on the stove, stick lumber inside and plug up the open end with rags and she is ready for business. I nail small cleats crosswise on the inside of the lower lath at intervals to hold the lumber up off of it. Of course you must use a support of some kind at the outer end of box.

Query No. 222 by Harold D. Huycke, 408 North D. Street, Tacoma, Wash. I would like to take advantage of the Guild Queries column to ask if any of the members know anything about the ship CALBUCO, ex KARMO ex CIRCE. From time to time, during the past six years the post-war "Sea Breezes" has mentioned this ship but there is little to be found prior to that time. She is an obscure ship, having been launched in 1885. Can anyone furnish the names of her last Norwegian owners who sold her to the Italian shipbreakers in 1948?

I would like to go on record with a perennial question of looking for information on the Alaska Packers sailing ship fleet. At the moment I am trying to get details on the wreck (particularly photographs and history of the ship STAR OF FALKLAND, ex ARAPAHOE, ex NORTHERN LIGHT, ex STEINBECK, ex DURBRIDGE. This ship lay in Winslow, Washington from 1914 till 1917, interned under the German flag and seized by the U.S. government in April 1917. Any members who are familiar with West Coast lumber carriers, both sail and steam (with emphasis on early development of steam schooners) along the Mendocino Coast are invited to correspond. I am working for the Weyerhauser Steamship Company, in combination traffic operations department and expect to get around the Northwest country during the next few years.

INTRODUCING NEW MEMBERS

H. W. McCurdy, 2929 - 16th Ave. S. W., Seattle, Wash. I am especially interested in the early voyages to the Northwest.

William J. Finnegan, 96 Hancock St., Dorchester 25, Massachusetts. "I am a ship modeler, interested in sail ships from 1600 - 1800 and I am interested in the history of these ships. I am anxious for information and plans for frame and plank models and books on this type."

Clarence H. Arveson, 3504 Del Rio, Shreveport, Louisiana. "I went to sea during the last war but have now swallowed the anchor. My father served in square-riggers in the 80's and 90's and I have two large models of barks he made, as well as some old diaries and photographs. My closest acquaintance with sail was with the 4-mast topsail schooners that were still around the Pacific. I made a voyage in the FRED J. WOOD. Others at that time were IRENE, ELLA A., COMMODORE, VIGILANT, and FOREST PRIDE. I wish to point out that I am not - at present anyway - interested in model building but more in the old ships themselves: records, data, photos, books, shipboard life, etc."

Lawrence T. Mercereau, 223 Golden Gate Ave., Belvedere, California. We thank Commodore Clifford Smith for introducing his friend to the Guild. Mr. Mercereau states his interests very briefly and says they are yacht racing and anything pertaining to the sea. Mr. Mercereau is a friend of our Captain Robinson and a member of the San Francisco Yacht Club.

Roger Robinson Olmsted, 252 Central Ave., Pacific Grove, California. "Particularly interested in scow schooners of San Francisco Bay; am preparing a book on the subject at the moment. Also interested in nearly every phase of small boat sailing; in early yachting in San Francisco Bay and sail on the Pacific in general". Mr. Olmsted is introduced to the Guild by Captain Leighton Robinson.

Niels Jensen, 60 Market St., San Francisco, California. Mr. Jensen is now a tug boat master. He writes that he is interested in the histories of the American Clipper Ships and in the early explorers of the seas. Mr. Jensen is introduced to the Guild by Commodore Clifford Smith.

Richard Warren Weston, Mil Robles Ranch, Route 5, Box 155, Porterville, California. Mr. Weston has recently completed a model of the Gloucesterman ELSIE and as soon as he can take time off from flying his own plane, will start a model of a square-rigger. Mr. Weston has sent as a present to the Guild some beautiful reproductions and oil paintings. One, a color reproduction of the Cup Racer - the DEFENDER - and fine pictures of square-riggers. Also a gift from Mr. Weston is a large oil painting of the ship SOBRON which was painted by a "descendent" of the Sewalls of Bath, Maine, then residing in Minneapolis. The best of the lot is a colored picture of a ship hove-to in a hurricane. (Note: Guild member William E. Young lives on King Caesar Road, Duxbury, Mass. Perhaps he might have some answers to Mr. Weston's query for information of King Caesar Weston who built ships in Duxbury.) The ship pictures will adorn the walls of the Guild's new large office.

Dr. Edward Richmond Ware, 538 South Flower St., Los Angeles, California. Dr. Ware was introduced very briefly in the absence of his application in the July issue. We are in receipt of his full application at this time and herewith substitute it for the other. Please change the Doctor's address to the above. Dr. Ware writes: "My grandfather Enoch Richmond Ware was a trader (brigs and schooners) with the Coast of West Africa 1830-1850 and later a merchant engaged in commerce with this area. He originally came from Winterport, Maine and went to sea as a cabin boy. I have visited the West Coast of Africa in 1951 and am interested in historical records of sailing ships and their accomplishment."

Letter to the Secretary - R. T. SHAYLER AND HIS SHOP.

What you say about your shop and den interest me because I started with a small table in one corner of the laundry in the basement. As I added tools and machines to my work shop, the folks were buying new gadgets for the laundry and kitchen, so my shop grew larger and pushed the laundry out into the crowded kitchen and then came the revolution. I fled with my work bench and tools upstairs to my bedroom, and put the bigger machines etc. out in the garage. The idea was - I would do all the heavy dirty work out in the garage and just do the assembling and rigging up in my bedroom. If you know anything about the winter and summer weather in Chicago, you will understand that work in the garage was limited to a few months in fall or spring, the other time of the year it was too hot or too cold. This situation went on for years and I began to do less and less shop work and began to collect my library and other things that pertained to ships and took to book binding, reading and other things that could more easily be done in my overcrowded bedroom. Several years ago, I put my foot down and took over a guest room at the top of the house and made it into a work shop and museum and now I am gradually making a comeback in this business of ship modeling and am taking up where I left off a good fifteen years ago and intend to rig the SEA WITCH this winter and then perhaps try to finish and rig the huge 1/4" scale model of the EMILY WHITNEY or maybe I will build that East Indiaman I dreamed of so long ago.

CORRECTION: It is too bad we make mistakes, especially as grave a one as this -- the LUCY EVELYN and Nat and Betty Ewer are at Beach Haven, New Jersey, not connecticut.

Gam Chair.

John Flynn and his lady visited Tom Hornsby and his lady - we do not know what the ladies talked about but we would have given a lot to sit on the side lines in that Gam of the two ship makers . . . John started for New England and whistle stops at The Old State House, Boston Liberal Arts, Mass. Tech., Andover, and Salem but observed snow on the approaching cars and headed south for warmer climes to The Museum at Annapolis and Mariners' Museum . . . Next month dues are due . . . and next month we publish our 1952 Roster and Index. . . John Minuse is staging a good come back from his accident - but other letters tell of the illness of many members and Dempsey Forsythe says it is tough to be confined to his bed with a ship model down stairs that needs planking. . . We have new quarters for the overflow -- Our little office is jammed with Guild plunder and now that we have two spots to keep things -- we suppose we will have more trouble than ever finding stuff -- But blessed be -- we have a good bed in the new office and room for company and it is a double bed so bring your "sail maker" when you come . . . We have watched the building of Fred Rice's cruiser the WANDERER with pictures since she was on the ways and now comes a picture of her going along under a stiff off shore breeze and Fred says she is a dandy. . . . From Richard C. Orr - I have just completed a 3/4" - 1' model of a whale boat with all gear mounted on bulwarks. Am now on my last order for 12 pdr. mounted on section of bulwark and deck with carved guns, crew and all gear. This is to be 1/2" - 1' and since I got back into ships again, I have finished the ESSEX-frigate and whaling schooner AGATE which I started years ago. Am planning on a series of small types taken from Chapelle's last book "American Small Sailing Craft." There are a number of very interesting ones there and I have Captain Slocum's SPRAY that I want to do. Every collector seems to have enough clippers today.

Harry D. Hamilton

Date of mailing: November 7, 1952